

FIG. 1

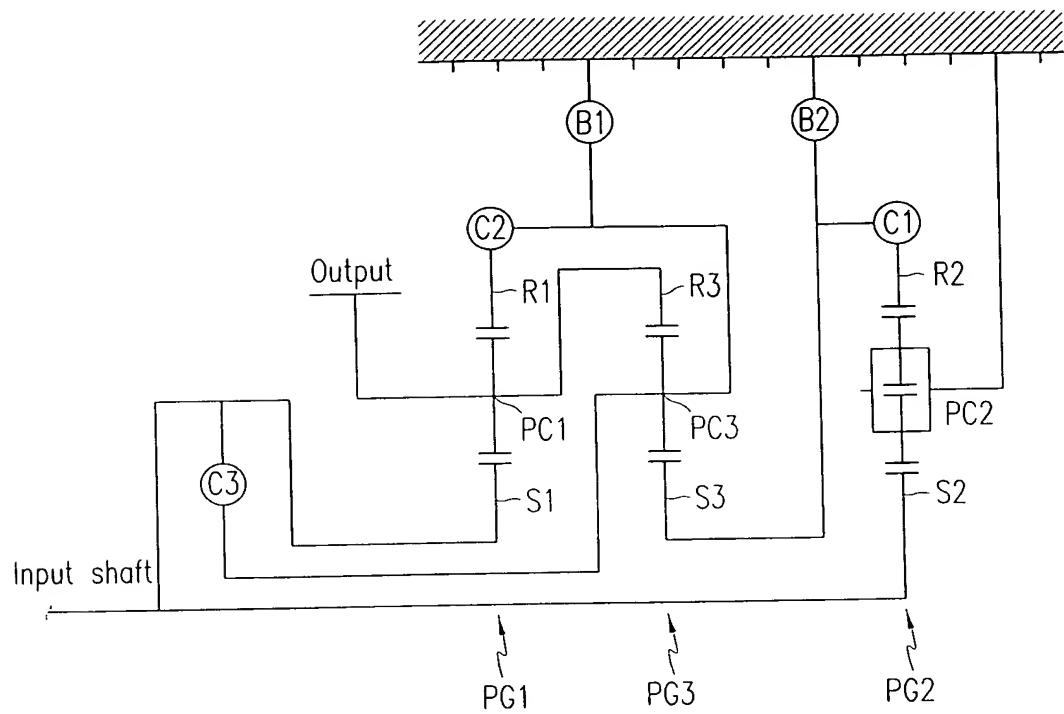


FIG. 2

| | C1 | C2 | C3 | B1 | B2 |
|-----|----|----|----|----|----|
| D1 | | ○ | | ○ | |
| D2 | | ○ | | | ○ |
| D3 | ○ | ○ | | | |
| D4 | | ○ | ○ | | |
| D5 | ○ | | ○ | | |
| D6 | | | ○ | | ○ |
| REV | ○ | | | ○ | |

FIG. 3

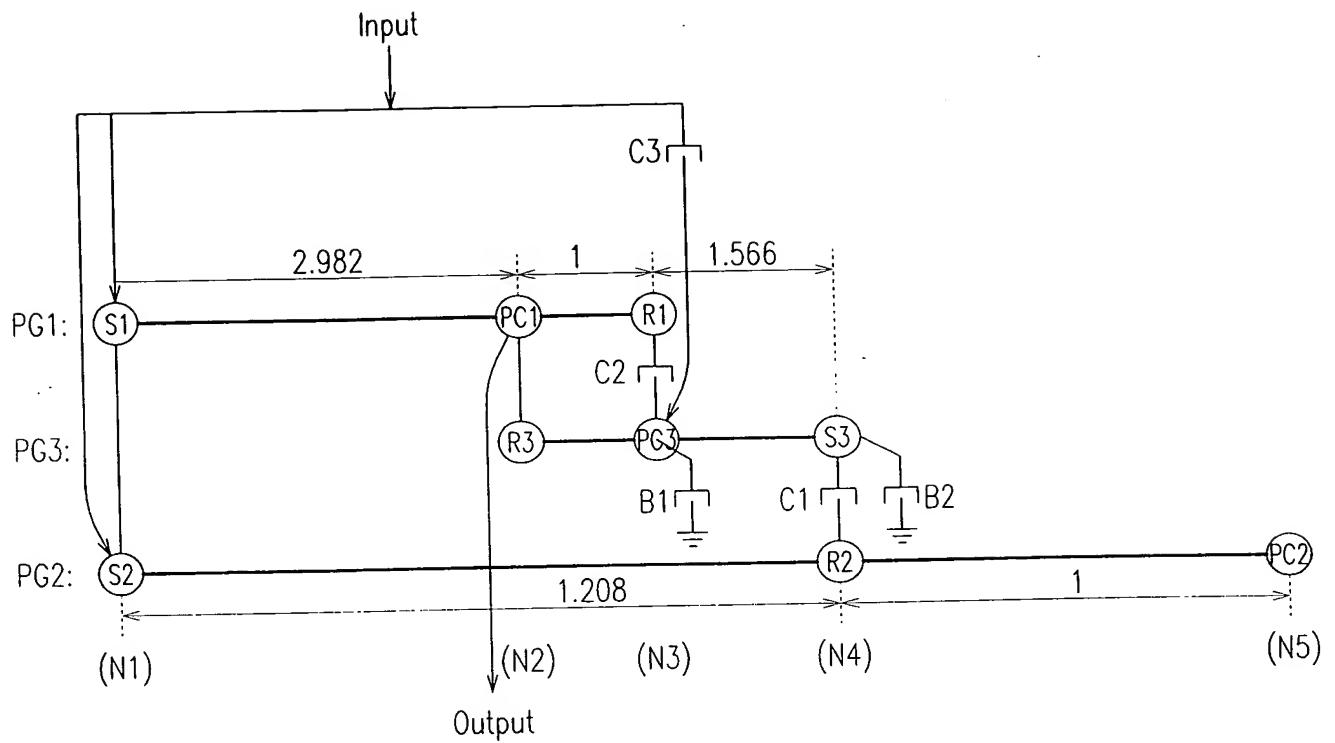


FIG. 4

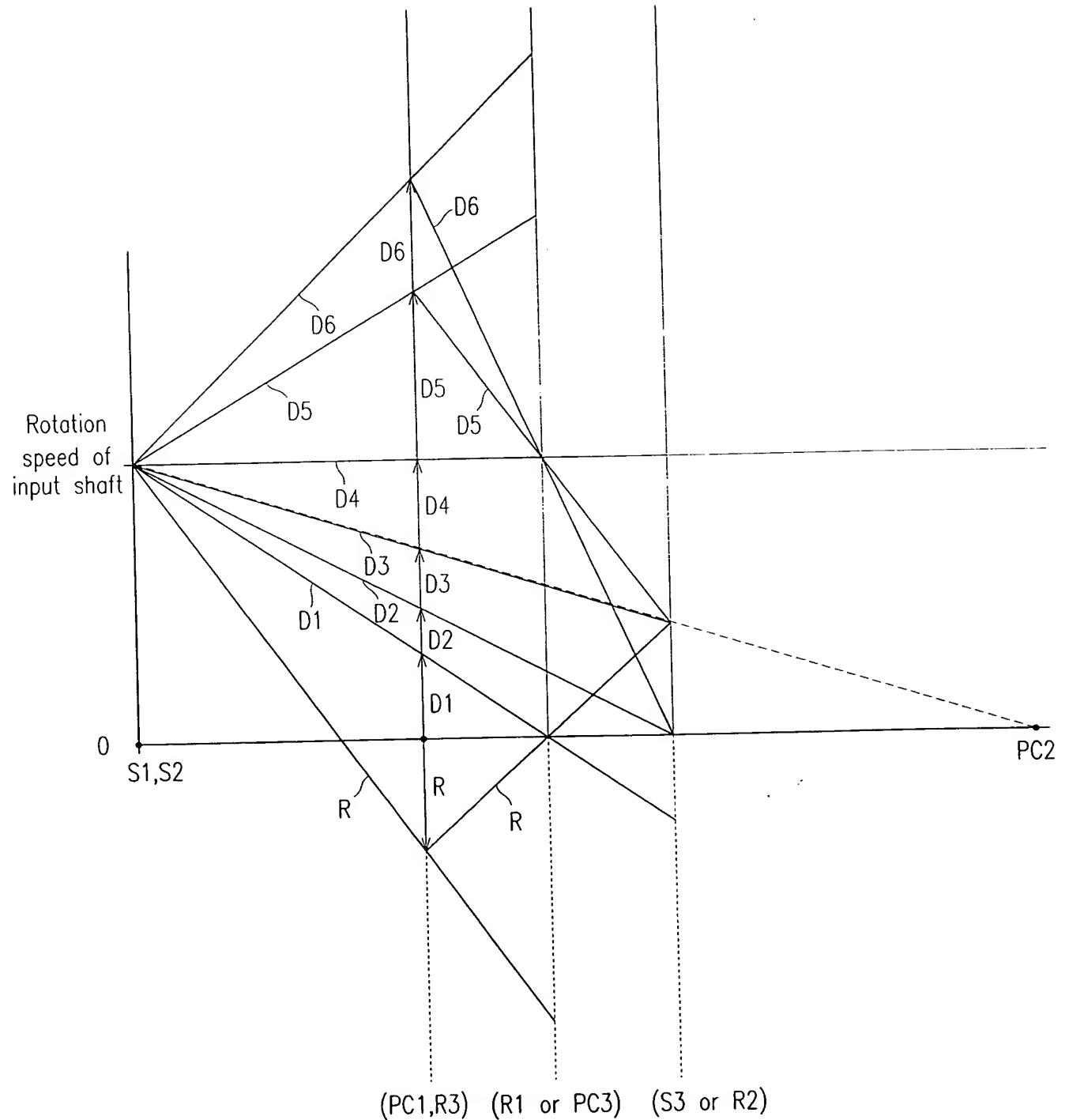


FIG. 5 A

| | |
|-------------------|-------|
| $Z_{R1}/Z_{S1} =$ | 2.982 |
| $Z_{R2}/Z_{S2} =$ | 2.208 |
| $Z_{R3}/Z_{S3} =$ | 1.566 |

FIG. 5 B

| | Gear ratio |
|----|------------|
| D1 | 3.982 |
| D2 | 2.162 |
| D3 | 1.417 |
| D4 | 1.000 |
| D5 | 0.741 |
| D6 | 0.610 |
| R1 | -3.458 |

FIG. 5 C

Rotation speed of each element (relative to input element)

| | S1 | PC1 | R1 | S2 | PC2 | R2 | S3 | PC3 | R3 | IN | OUT | P1 | P2 | P3 |
|----|--------|--------|-------|-------|-------|-------|--------|-------|--------|-------|--------|--------|--------|--------|
| D1 | 1.000 | 0.251 | 0.000 | 1.000 | 0.000 | 0.453 | -0.393 | 0.000 | 0.251 | 1.000 | 0.251 | -0.756 | -1.656 | 0.651 |
| D2 | 1.000 | 0.463 | 0.282 | 1.000 | 0.000 | 0.453 | 0.000 | 0.282 | 0.463 | 1.000 | 0.463 | -0.543 | -1.656 | 0.468 |
| D3 | 1.000 | 0.706 | 0.607 | 1.000 | 0.000 | 0.453 | 0.453 | 0.607 | 0.706 | 1.000 | 0.706 | -0.297 | -1.656 | 0.256 |
| D4 | 1.000 | 1.000 | 1.000 | 1.000 | 0.000 | 0.453 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | -1.656 | 0.000 |
| D5 | 1.000 | 1.349 | 1.000 | 1.000 | 0.000 | 0.453 | 0.453 | 1.000 | 1.349 | 1.000 | 1.349 | 0.353 | -1.656 | 0.906 |
| D6 | 1.000 | 1.639 | 1.000 | 1.000 | 0.000 | 0.453 | 0.000 | 1.000 | 1.639 | 1.000 | 1.639 | 0.644 | -1.656 | 1.656 |
| R1 | -1.152 | -0.289 | 0.000 | 1.000 | 0.000 | 0.453 | 0.453 | 0.000 | -0.289 | 1.000 | -0.289 | -1.301 | -1.656 | -0.750 |

FIG. 5 D

Slip speeds of non-operated friction elements (relative to input element)

| | C1 | C2 | C3 | B1 | B2 | SUM |
|-----|-------|-------|-------|-------|-------|--------|
| D1 | 0.846 | 0.000 | 1.000 | 0.000 | 0.393 | 2.239 |
| D2 | 0.453 | 0.000 | 0.718 | 0.282 | 0.000 | 1.453 |
| D3 | 0.000 | 0.000 | 0.393 | 0.607 | 0.453 | 1.453 |
| D4 | 0.547 | 0.000 | 0.000 | 1.000 | 1.000 | 2.547 |
| D5 | 0.000 | 0.467 | 0.000 | 1.000 | 0.453 | 1.919 |
| D6 | 0.453 | 0.853 | 0.000 | 1.000 | 0.000 | 2.306 |
| R1 | 0.000 | 0.722 | 1.000 | 0.000 | 0.453 | 2.174 |
| SUM | 2.299 | 2.041 | 3.110 | 3.890 | 2.752 | 14.092 |

FIG. 5 E

| Torque load (relative to input element) | | | | | | | | | | | | | | |
|---|-------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|----|
| | S1 | PC1 | R1 | S2 | PC2 | R2 | S3 | PC3 | R3 | C1 | C2 | C3 | B1 | B2 |
| D1 | 1.000 | -3.982 | 2.982 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | -2.982 | 0.000 | 2.982 | 0.000 | |
| D2 | 1.000 | -3.982 | 2.982 | 0.000 | 0.000 | 0.000 | 1.162 | -2.982 | 1.820 | 0.000 | -2.982 | 0.000 | 1.162 | |
| D3 | 0.655 | -2.609 | 1.954 | 0.345 | 0.417 | -0.761 | 0.761 | -1.954 | 1.192 | 0.761 | -1.954 | 0.000 | 0.000 | |
| D4 | 0.251 | -1.000 | 0.749 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | -0.749 | 0.749 | 0.000 | |
| D5 | 0.000 | 0.000 | 0.000 | -0.214 | -0.259 | 0.473 | -0.473 | 1.214 | -0.741 | -0.473 | 0.000 | 1.214 | 0.000 | |
| D6 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | -0.390 | 1.000 | -0.610 | 0.000 | 0.000 | 1.000 | 0.000 | |
| R1 | 0.000 | 0.000 | 0.000 | 1.000 | 1.208 | -2.208 | 2.208 | 3.485 | 2.208 | 0.000 | 0.000 | 3.485 | 0.000 | |

FIG. 5 F

Power transmission route

| | PG1 | PG2 | PG3 | SUM |
|-----|-----|-----|-----|-----|
| D1 | 1 | 0 | 0 | 1 |
| D2 | 1 | 0 | 1 | 2 |
| D3 | 1 | 1 | 1 | 3 |
| D4 | 0 | 0 | 0 | 0 |
| D5 | 0 | 1 | 1 | 2 |
| D6 | 0 | 0 | 1 | 1 |
| R1 | 0 | 1 | 1 | 2 |
| SUM | 3 | 3 | 6 | 12 |